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ABSTRACT

The program entitled Prevention of Learning Disabilities: An Interdisciplinary Model, developed and operated by the Learning Disorders Unit of New York University Medical Center, has three elements: scanning, diagnosis, and intervention. Educational intervention is done primarily by Board of Education teachers and educational assistants under the supervision of the Learning Disorders Unit staff. Children are taught individually or in small groups three to five times each week in sessions lasting 30 minutes. The prescriptive approach employed, designed to build foundation skills necessary for progress in reading, provides directed activities to teach accuracy of perception within single modalities and intermodal skills to relate input of several modalities. Educational plans are implemented with tasks proceeding through three stages of increasing complexity: matching, copying, and recall. Evaluation of the model has indicated that, in contrast with controls, program participants improved in perceptual skills and oral reading, word recognition, phonics skills, and reading comprehension. The effectiveness of intervention has been demonstrated in a nonpromotion rate for participants of 5 percent or less. Followup data has enabled examination of additional issues, including (1) implications of early cognitive intervention on pupil adjustment, (2) sex differences in vulnerability to learning disability, and (3) the role of subgroups existing within the sample of vulnerable children. Longitudinal aspects of the evaluation have shown that educational achievement differs among subgroups. (RH)

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Early Intervention with Vulnerable Children: Results of a Demonstration Project

Rosa A. Hagin, Ph.D.*

ABSTRACT: The impact of a program for the prevention of learning disabilities upon promotional practices in an inner city school is examined over a thirteen year period. Results of educational intervention are demonstrated in a decrease in non-promotion rate to five per cent or less. Longitudinal study also shows that the trajectory of educational achievement differs among the subgroups of children identified as vulnerable in first grade.

Four key integrating systems influence the developing personality of the child: health services, families, peer relationships in play, and last of all schooling (Bower,1972). Schools come last in line because much teaching is based on the assumption that young children have already acquired a number of cognitive-affective skills. They have learned to use language symbols, to discriminate reality from fantasy, to accept and to modify rules, and to seek goals outside themselves. In short, schools are organized as if all children enter through the same door with the same purposes and preparation. This is an over-optimistic assumption that may have disastrous consequences for some children. Closing the gap between what children are when they come to school and what the educational system expects them to be is the principle underlying preventive approaches.

This paper will examine first grade promotion practices within the setting of one such preventive program, developed and operated by the Learning Disorders Unit of New York University Medical Center and funded as a model program by the Office of

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Special Education of U.S. Department of Education. It will present a program description, evaluation results, and data concerning promotions for children in birthdate years 1962 through 1975.

The Setting

Our data source is a midtown Manhattan elementary school, one of more than one hundred fifty schools who have adopted our preventive model. The ethnic composition of the sample is 80% white (including 47% Hispanic), 11% black, and 9% other including Chinese, Japanese, Filipino, and Asian Indian. Heads of household in families living within this school district represent a wide occupational range. They tend to cluster at the extremes of the socioeconomic scale with a heavy representation of professional, technical, and managerial groups on one hand (approximately 34%) and ofsemi-skilled, unskilled, and service occupations on the other(approximately 28%). The clerical and sales groups and the craftsmen and operatives groups represented about 15% each and 8% were unemployed. Because of the socioeconomic range, this school does not qualify for such special programs as Title 1.

The Learning Disorders Unit has no administrative responsibility in the school. We were invited to be "guests in the house" serving in an advisory capacity to strengthen the educational program through formal and informal consultation, inservice training of staff, clinical and intervention activities.

Our program, Prevention of Learning Disabilities: An Interdisciplinary Model has three elements: scanning, diagnosis, and intervention. All services are provided in resource rooms located in the child's own school. Educational intervention is provided by Board of Education teachers and educational

assistants under the supervision of the Learning Disorders Unit staff. Children are taught individually or in small groups three to five times each week in sessions lasting thirty minutes. Although services are structured as a two-year program for kindergarten and first or first and second grades, the children's progress is monitored throughout the elementary grades. These longitudinal data permit us to chart the incidence of non-promotion for the past thirteen years, as can be seen in Figure 1.

Insert Figure 1 about here.

Program Elements

The first step in the preventive program is to locate children vulnerable to learning failure. This is done by means of a scanning test, SEARCH, based on the concept that antecedents of learning failure may be found in delay in acquisition of spatial orientation and temporal organization. These delays may appear in various combinations and each child may be expected to have a unique pattern of strengths and needs. By surveying all the children in the kindergarten with SEARCH, we attempt to identify children who are vulnerable to learning failure, but who have not yet failed.

The second step in implementing the preventive model is to provide intensive diagnostic examination for children identified on SEARCH. These diagnostic services are provided by the staff of the Learning Disorders Unit who represent the disciplines of psychology, psychiatry, education, and social work. Results of SEARCH and the diagnostic examinations are pooled in case

conferences attended by the school and unit staffs in order to clarify the learning needs of individual children and to plan appropriate intervention strategies.

The third element of the preventive program is provision of educational intervention. These activities are described in TEACH (Hagin, Silver, and Kreeger, 1976) a prescriptive approach designed to build the foundation skills necessary for progress in reading. It provides directed activities to teach accuracy of perception within single modalities and intermodal skills to relate the input of several modalities. This approach uses the profile of strengths and needs defined by SEARCH to set teaching priorities and to build a teaching plan. Educational plans are implemented through tasks selected from TEACH. These tasks proceed through three stages of increasing complexity: matching, copying, and recall. Practice continues until mastery criteria appropriate for each task have been reached. Teaching logs, completed with the child during Recap at the end of each teaching session, record progress with the intervention plans.

Evaluation of the Model

The model was validated by the Joint Dissemination and Review Panel of the U.S. Office of Education and the National Institute of Education on the basis of data on its educational impact, cost effectiveness, and replicability.(Educational Programs that Work, 1983). The evaluation design provided for a control group design with two consecutive groups, BD 1970 (N=126) and BD 1971 (N=91) as subjects.

SEARCH was administered prior to first grade to identify the children at risk for learning failure. In the BD 1970 group vulnerable children were randomly assigned to either intervention or no-treatment control conditions. For BD 1971 vulnerable

children were assigned to one of two cohorts varying in duration of intervention. Cohort I received intervention for the entire school year, while Cohort II received intervention only during the second half of the school year. This design permitted the comparison of perceptual skills and reading skills at the end of first and second grades for intervention group children with equally vulnerable controls.

Insert Table 1 about here

Table 1 summarizes the results of analyses of variance for BD 1970 end of first grade achievement data. By the end of first grade, the Intervention group made statistically significant gains in perception relative to equally vulnerable controls. Furthermore, enhanced perceptual skills were associated with increased achievement, relative to controls, in oral reading, word recognition, and phonics skills. Results of analyses of variance for BD 1970 end of second grade results show that the intervention group continued to surpass the controls on measures of oral reading, word recognition, and phonic skills. The intervention group also showed statistically greater achievement in reading comprehension on a criterion referenced measure, Mastery Tests which accompany the Basic Reading Series (Rasmussen & Goldberg, 1970).

Insert Table 2 About here.

Table 2 summarizes the end of first grade data for BD 1971. Cohort I exceeded Cohort II on measures of perception, oral reading, word recognition, and phonic skills. These contrasts

are less striking than the comparisons for BD 1970 when a true no-treatment control group was possible. They were, nevertheless, significant at the .05 level and represent differences of at least one-third of a standard deviation for the reading achievement measures.

While this evaluation provided evidence of the educational impact of the preventive program upon the group of children identified as vulnerable, followup data on the total group enrolled have enabled us to examine a number of questions:

1. What are the implications of early cognitive intervention on pupil adjustment characteristics in the middle elementary grades? Hagin & Silver(1977)found that intervention children were not significantly different from their non-vulnerable classmates on ten out of eleven measures of social adjustment studied three years after intervention was completed.

2. Are boys more vulnerable to learning disability than girls? Karlen(1982), after examining 12,000 SEARCH records found this was not necessarily so at ages five and six years. Data secured from the intact groups studied in the preventive projects permitted the examination of sex ratios among vulnerable children apart from the inherent bias that may be present in referred samples.

3. What are the subgroups within the sample of children identified as vulnerable by SEARCH? Clinical formulations of subgroups identified by Hagin, Beecher,&Silver(1982) were confirmed through cluster analysis and multidimensional scaling by Stokes (1983).

Vulnerable children identified by SEARCH comprise a

heterogeneous group with some subtypes emerging. These subtypes have practical significance not only in terms of the selection of appropriate intervention strategies, but also for their implications for long term educational planning:

- Children with Specific Language Disability who demonstrate specific immaturity in orienting symbols in space and sounds in time, immaturity in orientation of the body image in space, and problems in associative learning

- Children with Neurological Findings who show deviations in gross and fine motor coordination, attention, and impulse control on the neurological examination

- Developmentally Immature Children who are characterized by a slow rate of maturation in all aspects of development

- Children with Emotional Problems who demonstrated emotional problems either as a reaction to pathological conditions within the family or as already established neurotic or behavior problems severe enough to impair learning)

These last analyses have implications for promotion policies, for they highlight the different educational trajectories associated with the subgroups even when children are provided with individualized intervention programs, as shown in Figure 2.

Insert Figure 2 about here.

What are the lessons about promotion policies we have learned from more than a dozen years of preventive work in the schools? No matter what euphemism one uses--non-promotion, retention, hold

over --the children regard it as a failure--"staying back." Non-promotion of 24% of the pupils can be a painful, expensive, and possibly unnecessary procedure. Our data suggest two conclusions:

- Adequate supportive services can reduce the number of nonpromotions. It is clear that repeating a grade is not a universal panacea; there is no administrative or clinical magic that will render all children able to progress through their schooling at the same rate. The opportunity for interdisciplinary consultation may lead to informed, data-based discussion of alternatives.

- Our data document differences in individual patterns of development. Consultative services provided by school psychologists can help the school staff in making decisions about promotion that are based on individual needs rather than administrative directives.

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TABLE 1

Impact of Intervention: End of Second Grade

Analysis of Variance

BD 1970

	First Grade			Second Grade		
	Intervention Mean	Control Mean	F	Intervention Mean	Control Mean	F
SEARCH	64.52	56.05	31.52***			
Oral Reading	16.23	11.66	10.31**	36.41	28.36	11.71***
Word Identif.	15.66	7.45	7.45**	64.52	47.14	9.74**
Phonics	5.08	1.26	5.51*	22.04	8.82	20.64***
Comprehension				61.52	45.91	25.18***

* p=.05
** p=.01
*** p=.001

Intervention N=86
Control N=39

Table 2

Impact of Intervention: End of First Grade

Analysis of Variance

BD 1971	Cohort I (N=45) Mean	Cohort II (N=46) Mean	F
SEARCH	67.59	62.68	12.39*
Oral Reading	17.67	12.91	5.54*
Word Identif.	21.80	11.55	4.70*
Phonics	5.41	2.23	3.96*

* p=.05

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Figure 1

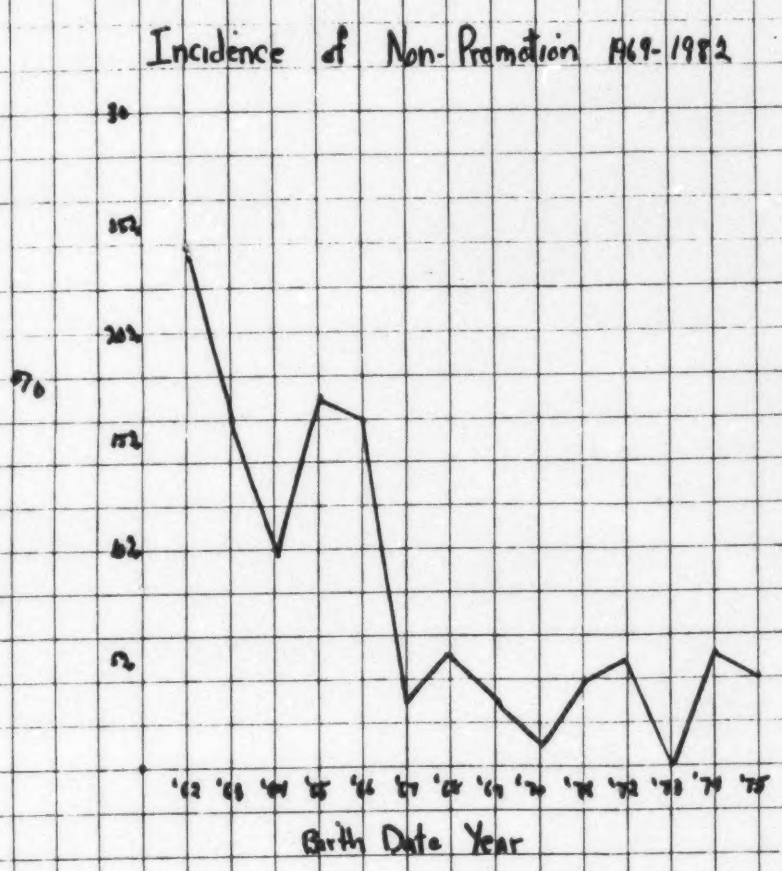
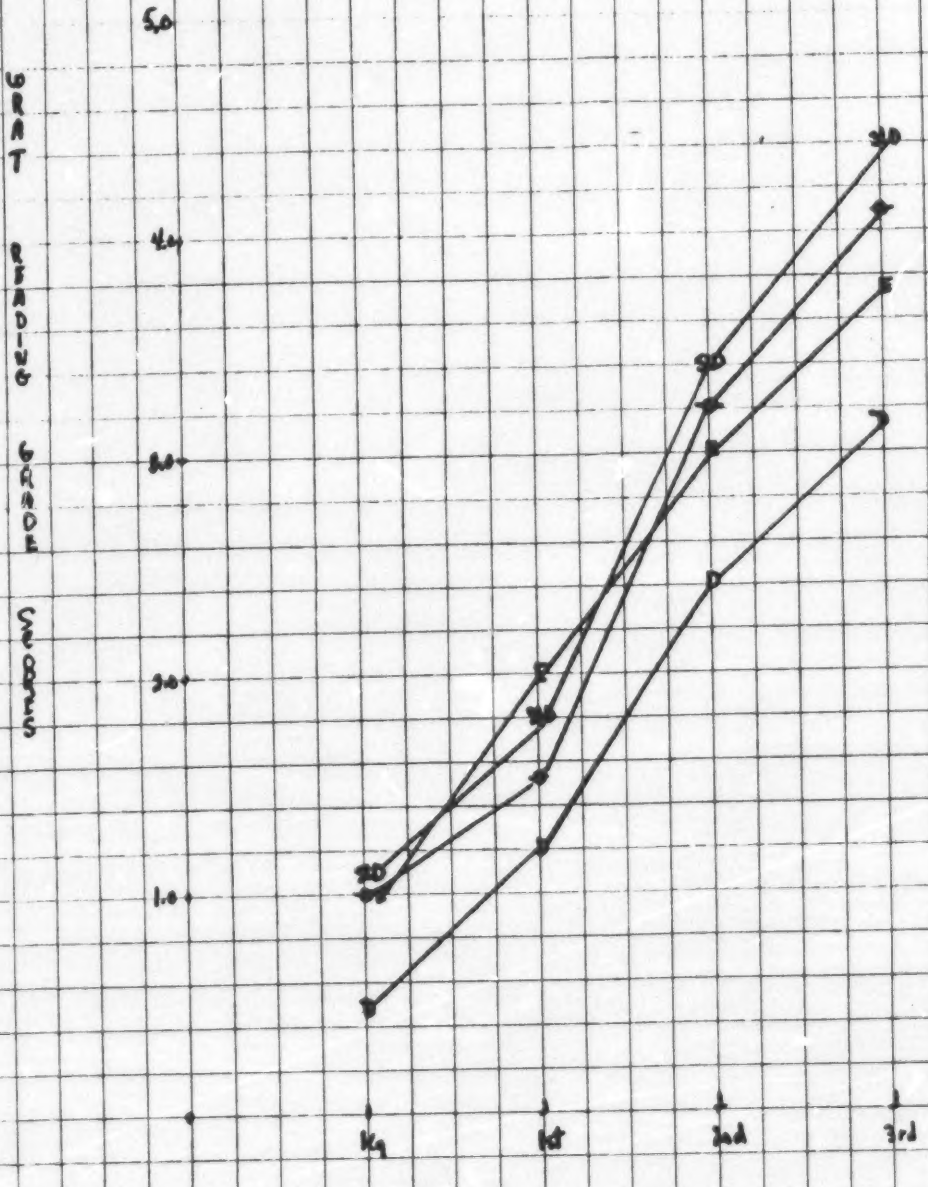


Figure 2

Subgroups: Longitudinal Reading Scores



SLD = Specific Language Disability
Θ = Neurological Findings
E = Emotional Problems
D = Developmental Immaturity